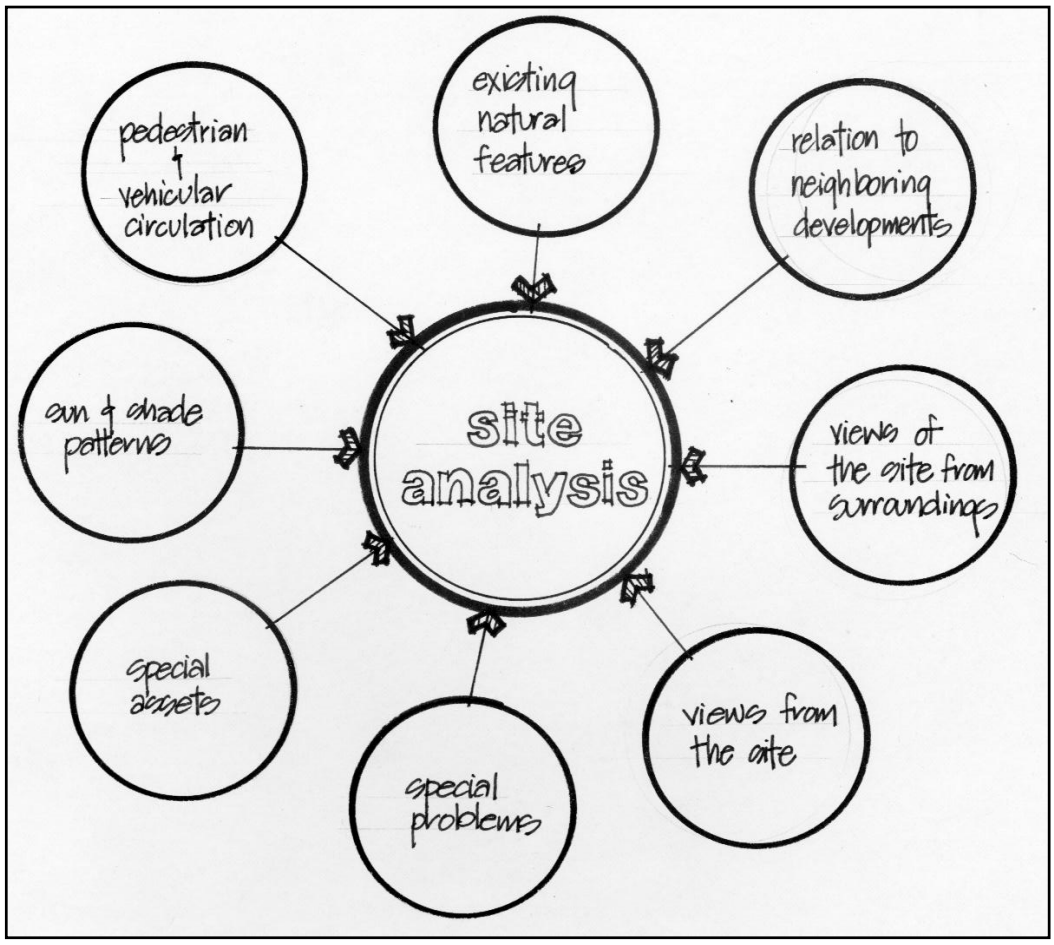
2.0 Site Development

2.1 Site Analysis

A comprehensive site analysis examining a site's physical properties, amenities, special problems, character, and neighboring environment is strongly encouraged before planning and design begins.

The optimal layout of any project site requires an in-depth understanding of local context and a detailed site analysis. A site analysis is particularly important in Sedona, where widely varying terrain, scenic views, natural watercourses, preservation of existing vegetation and relationships to existing development, especially residential development, must be considered in site planning. All development proposals should demonstrate a diligent effort to retain significant existing natural features characteristic of the site and surrounding area.

All new development proposals will be reviewed with respect to their response to the physical characteristics of the site and the contextual influences of the surrounding area. These should be considered early and throughout design development.

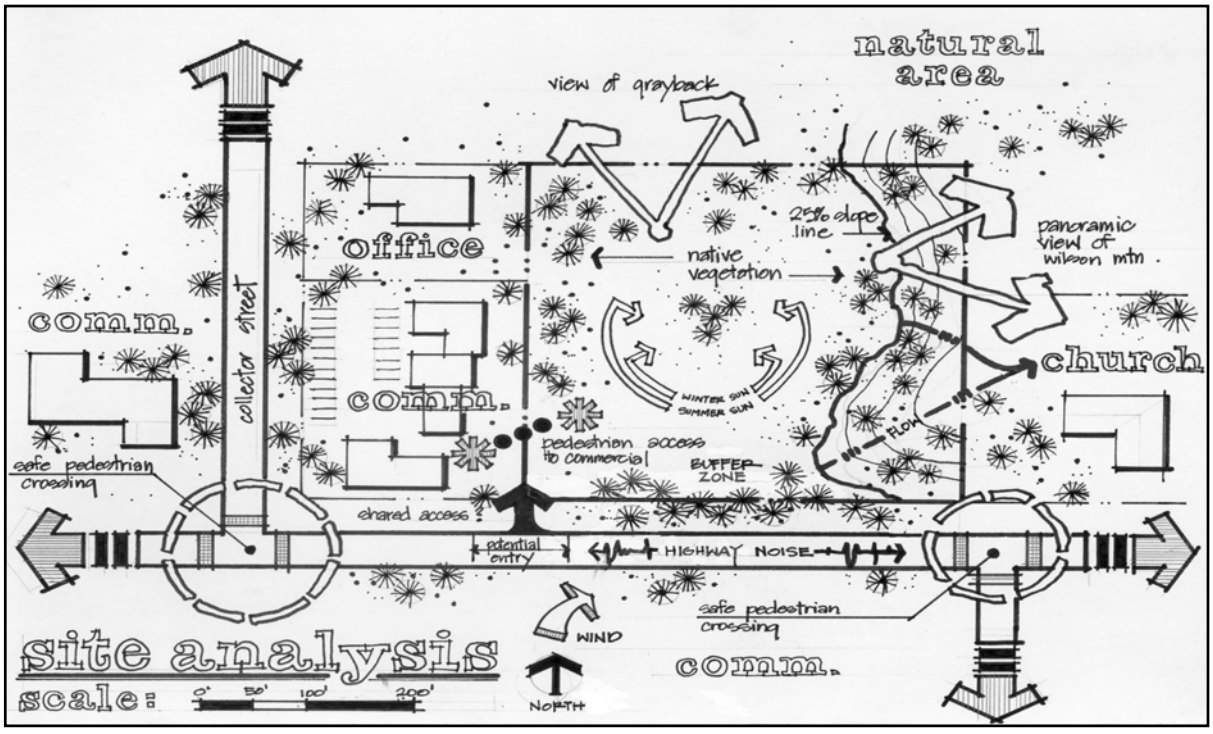


Key physical site attributes that should be identified, analyzed, and considered in the planning process include:

- Topography, existing landforms and significant rock outcrops, with areas of slope over 25% highlighted.
- Existing vegetation and trees, especially areas that have been minimally disturbed,
- Soil properties and depth to bedrock.
- Existing watercourses, floodway and flood plain areas, and drainage patterns.
- Climatic factors, such as wind, sun angles, solar exposure and shade pattern.
- Important site features that are either potential amenities or hazards.
- View corridors and prominent views from points surrounding the site as well as from the site.

Key contextual influences that should be identified, analyzed, and considered in the planning process include:

- Land use and site organization in relation to building form, character and scale of existing and proposed development.
- Sensitivity and nature of adjoining land uses.
- Location of property boundaries and setbacks.
- Location of adjacent roads, driveways, off-street vehicular connections, pedestrian ways, access points and easements.
- Existing structures and other built improvements.
- Prehistoric and historic sites, structures and routes.
- Other features of the site and/or surrounding area that may be impacted by or may impact the proposed development.



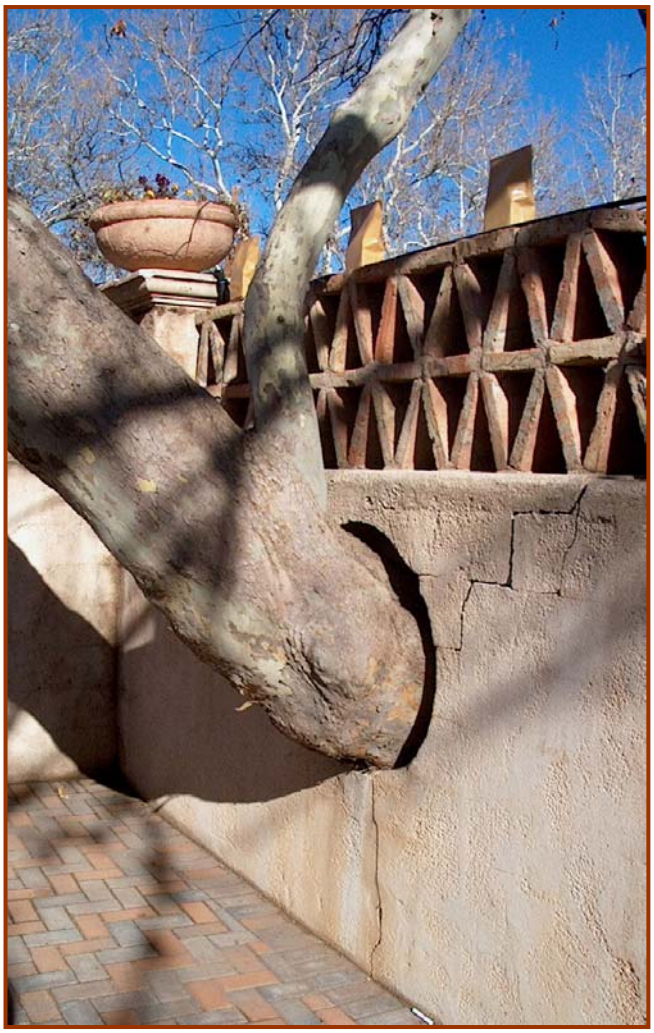
2.2 Site Design and Planning Principles

The principal goal of site design and planning is to sensitively fit the built environment into the natural environment with minimal disturbance to the natural ecosystem. Specific consideration should be given to the following issues, which are further discussed within this Design Review Manual.

2.2.1 Sensitivity to Natural Features

Sedona's natural environment is fragile. Site design should respond to the topography, vegetation/landscape features and drainage characteristics of the site as outlined by the following:

- Site grading should respond to the natural characteristics of the site's underlying topography. Finished floor elevations of buildings and parking areas should transition with the grades of the site.
- Site designs should incorporate and retain features of the natural environment such as drainage ways, vegetation masses and mature trees.
- Buildings should be sited to take advantage of the natural topography of the site so that the apparent mass and bulk of large structures can be reduced.
- Site design should be influenced and guided by significant site features, such as rock outcrops, washes and prominent views enjoyed by key locations within the public realm.
- Maximize the use of disturbed land for roads, parking areas or structures.
- Natural features and vegetation should be preserved wherever possible, rather than removed and replaced.



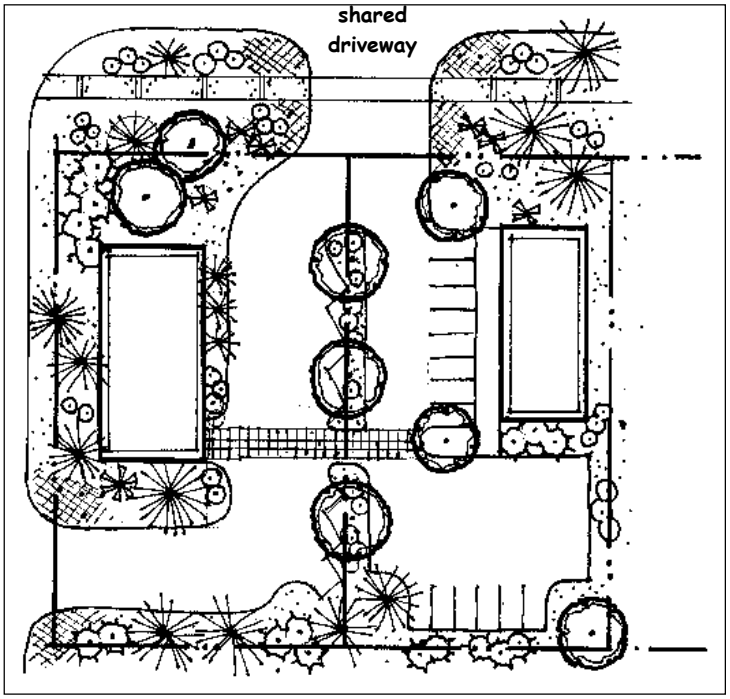
See also Section 2.4.5, "Relationship to Topography and Vegetation" and Section 4.2.1 "Preservation of Existing Vegetation and Topographic Features."

2.2.2 Arrangement of Spaces

Successful site planning requires the arrangement of outdoor spaces and buildings in ways intended near create attractive and functional spaces for people's relaxation, business or pleasure. Site designs should respond to local contextual influences and to the design and layout of adjoining developments. Elements that could be coordinated between adjacent sites include:

- Shared driveways for accessing adjoining streets.
- Linkages of internal vehicular circulation systems.
- Linkages of interior pedestrian systems with those of adjoining sites.
- Linkages/continuation of open space systems.
- Perimeter open space and landscape buffer zones.
- Areas and access for refuse collection.
- Drainage and detention facilities.
- Linkages of any other networks and/or functional areas where a coordinated site design approach will benefit the cohesiveness of a larger area, such as shared utility easements.

2.2.3 Viewshed Analysis

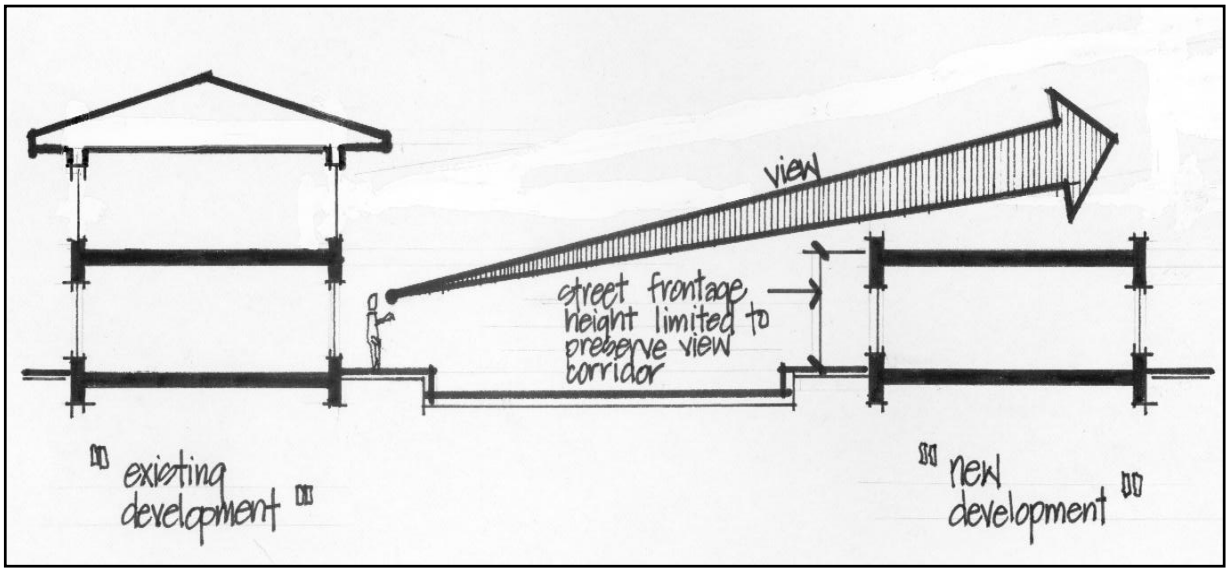


Due to the value and importance of scenic beauty in the Sedona area, it is essential to preserve where feasible existing views important to neighboring properties, while incorporating into the design the best views from the subject property. It is also important to consider the probable impact of a new development on future potential buildings and developments.

Two types of views are important and should be considered in the analysis.

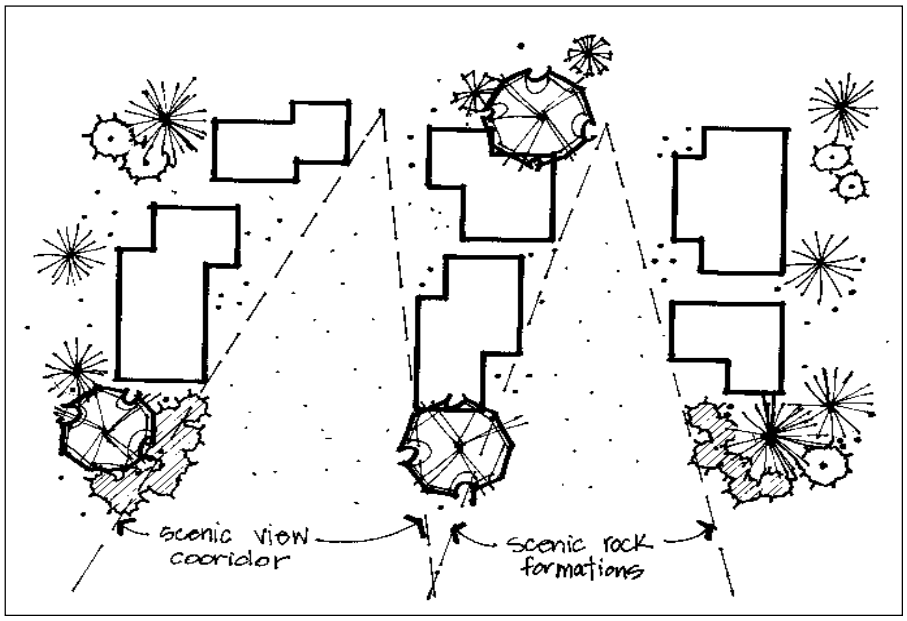
Views from within the site:

- Identify open views such as, of spectacular red rock formations, Oak Creek, panoramic views of Mingus Mountain and the Verde Valley.
- Identify nearby intimate views of interesting landscape compositions seen through onsite trees and existing vegetation.
- Evaluate how a view corridor in the future could be negatively impacted by new buildings or trees.



Views into the site:

- Identify the area corridors from which the new development could be seen.
- Develop a site plan to minimize visual impact and identify possible mitigating measures.



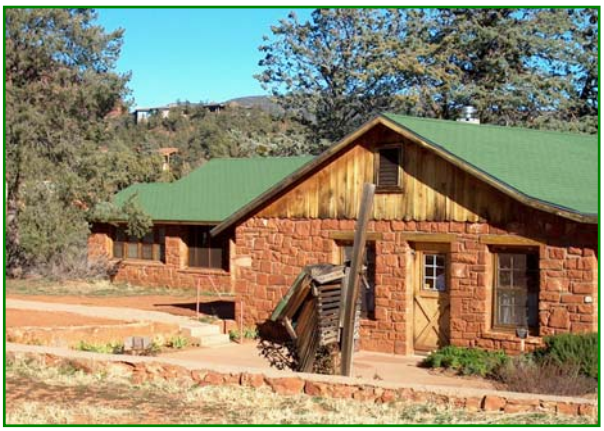
See also Section 2.2.2, "View Considerations".

2.2.4 Sensitivity to Historical Sites, Structures and Roadways

The Sedona Community Plan addresses two goals specific to the need for historic sensitivity, namely the need for "integration of historic and archaeological influences into the basic fabric of the community", and the need to "develop a sense of pride within the community".

Few historical structures remain to attest to Sedona's past as a frontier and farming community. Historic sites, structures and routes should be retained and incorporated into new developments, as they are important reminders of our unique past. New buildings should reflect or complement the color, texture, form and scale of exceptional historic structures.

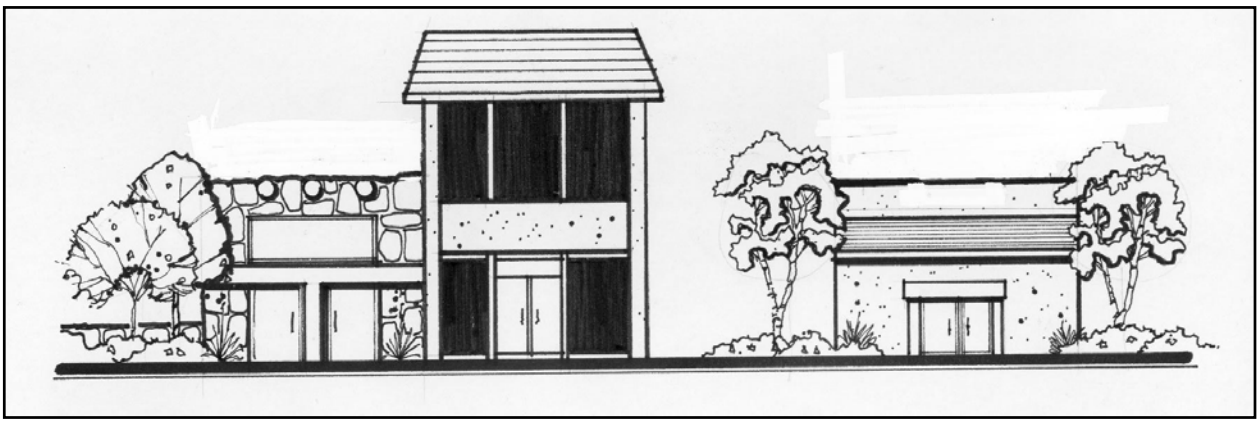
A survey of historically significant buildings and sites called the "Historic Resource Survey of Sedona" is available in the Department of Community Development.



2.2.5 Community Context

All development proposals should enhance the small town character of the community. Reference should be made to the vision statement and community goals in Chapter 2 of the Sedona Community Plan.

Encouraged



Discouraged

See also Section 2.6.1, "Relationship to Adjacent Developments".

2.3 Drainage Way Design

All development proposals should, where feasible, preserve existing drainage courses in as natural a manner as possible.

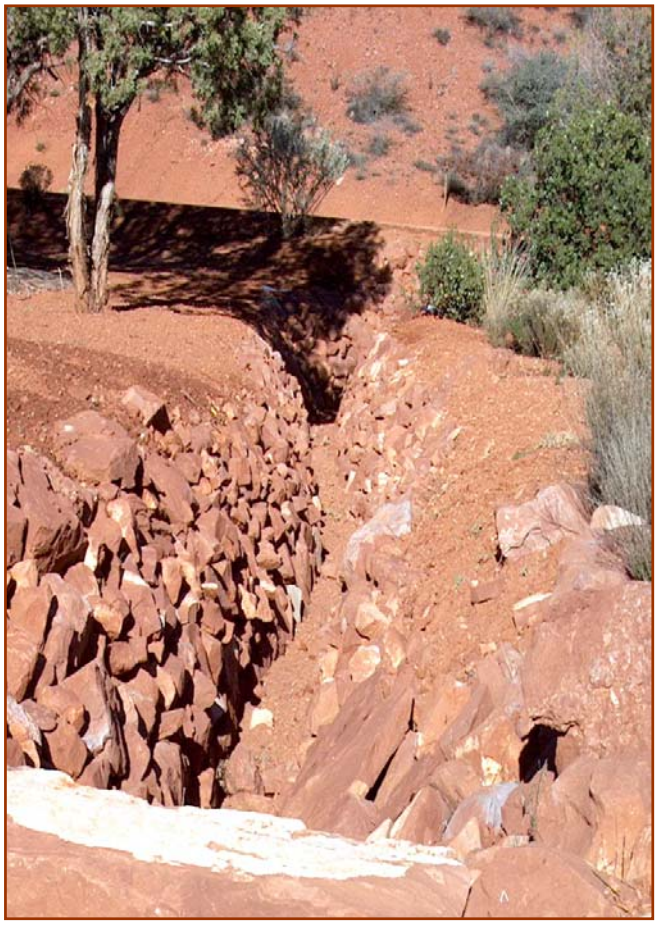
The provisions of Article 8 of the City of Sedona Land Development Code outline minimum standards for grading and drainage. The sometimes more restrictive standards presented in this manual reflect the community's desire for development sensitive to the special nature of Sedona.

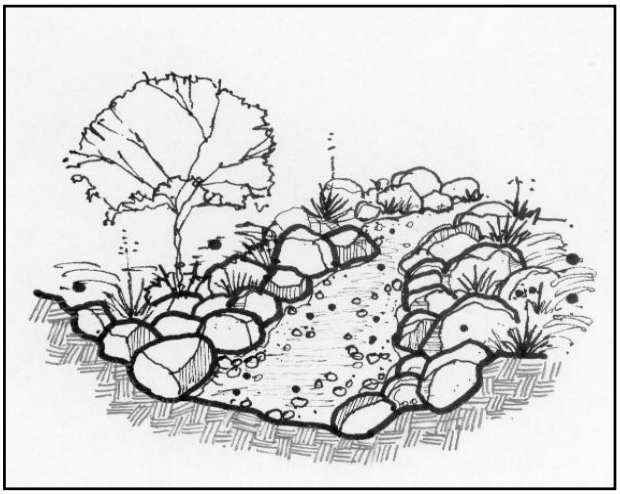
Specific consideration should be given to the following:

2.3.1 Drainage Ways

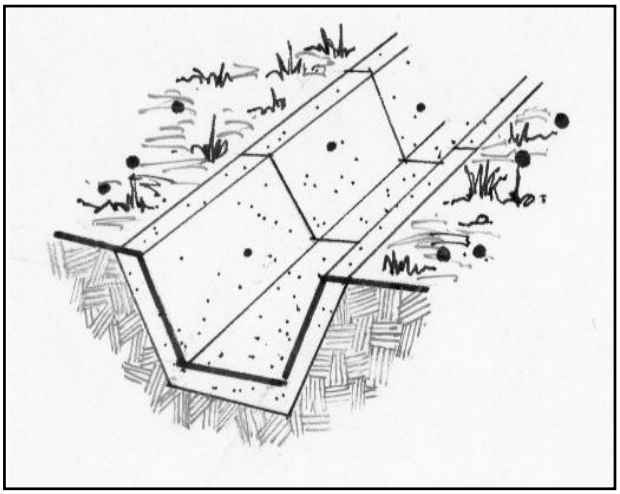
Channels and swales

The use of concrete channelization (utilizing, for example, preformed concrete channels or sprayed-on concrete such as Gunnite or Shotcrete), for drainages requiring mechanical stabilization is strongly discouraged. A preferred method is armoring with dry laid native or river-washed rock of a variety of shapes and sizes. This provides a more natural appearance that is more visually appealing, allows for vegetation to be planted within and between the rocks to soften their appearance, and encourages the groundwater recharge process. The uniform and even placement of rocks and boulders is discouraged. Instead, emphasis should be placed on laying rocks in naturally shaped areas where the drainages are most prone to erosion, such as on the outside of curves. Riparian tree species should also be planted along drainage edges for emphasis and interest.





Encouraged



Discouraged

Check dams
Natural appearing check dams and gabion type structures faced with large natural rocks may be appropriate in some locations.

Stable drainage systems
The design of permanent, effective and stable drainage systems by preserving vegetative cover is encouraged, and permanent landscaping should be installed in a timely manner to prevent rapid runoff, erosion, and downstream siltation.

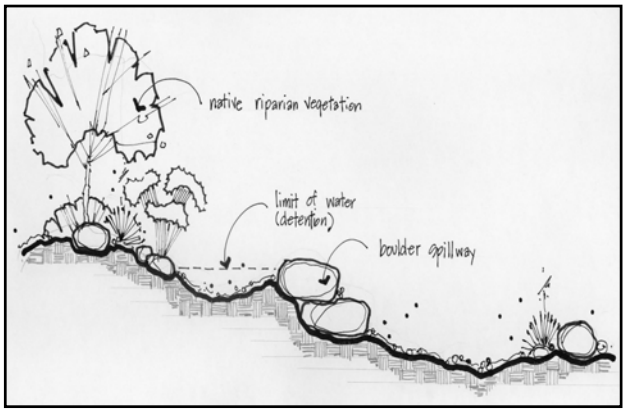
See also Section 2.4.5, "Relationship to Topography and Vegetation", Section 2.10,"Fences and Walls", and Section 4.0, "General Landscape Character".

2.3.2 Storm Water Detention Basins

Where site design precludes the use of alternative methods of storm water management, storm water detention basins (used to remove sediment from storm water runoff and to temper runoff quantity and rate of flow) should be designed as pleasing, natural looking and usable resources. The following standards apply:

- Detention areas should be designed in freeform shapes to blend with the natural landscape.
- The slopes of detention areas should be gentle and rounded, but they may incorporate the use of rocks and boulders to increase interest. Spillways of natural rock are preferred.

- Detention areas should be landscaped to serve as areas of visual interest, and to soften their appearance. Where appropriate, riparian vegetation species are most suitable. A perimeter of heavier landscaping often creates a defined space within the development, along with a sense of variety that is visually appealing. Otherwise, the chosen landscape materials for the detention area should be consistent with the overall landscape palette of the project.
- In some cases, detention areas may include a small artificially maintained pool to serve as a point of interest.
- Detention areas should be integrated into usable open space and/or wetland habitat.
- Controlled access and signage can provide for safe public use of such sites.
- Existing wetlands riparian areas should be maintained in undisturbed form.
- Where feasible, detention areas should be used for the collection, storage, and reuse of water for onsite irrigation.



Note that standard engineering details for drainage channels and detention areas that can be considered as a typical design, should have natural appearance standards as described above applied to them. This can be accomplished by for example, covering the ends of a culvert pipe with red rock, placing red rock on bridges and box culverts and integrating landscaping into drainage way and swale design.

2.3.3 Soil Erosion and Sedimentation Control

The proper control of sedimentation and management of soil erosion on construction sites is very important in Sedona, particularly with regard to the preservation of Oak Creek, a federally designated Scenic and Impaired Waterway. As most drainages within the City eventually discharge into Oak Creek, soil erosion and sedimentation control is important throughout the City and not only on construction sites immediately adjacent to the creek.

Reasons for sedimentation control

Sedimentation control is important for the following reasons:

- Eroded soils and sediments can get deposited onto streets by vehicles leaving the site or by storm water runoff. This can be hazardous to drivers and bicycle riders.
- Eroded soils can block culverts and cause localized flooding.
- Eroded soils can enter water bodies and channels. Deposited sediments can, for example, cover the eggs of fish and other organisms preventing them from reproducing.
- Suspended sediments can clog the gills of fish and reduce light penetration, therefore inhibiting photosynthesis of water plants.
- Clear water is more desirable for swimming, fishing and other recreational activities than muddy or cloudy water.

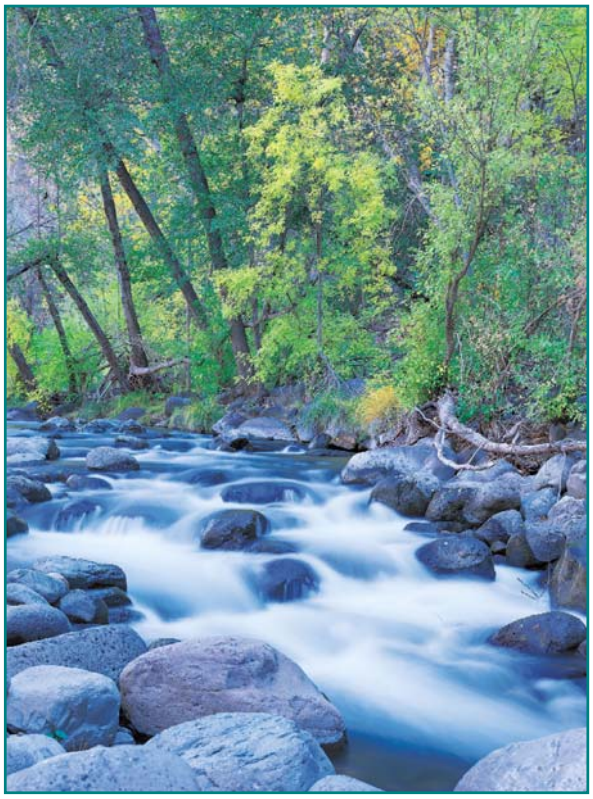
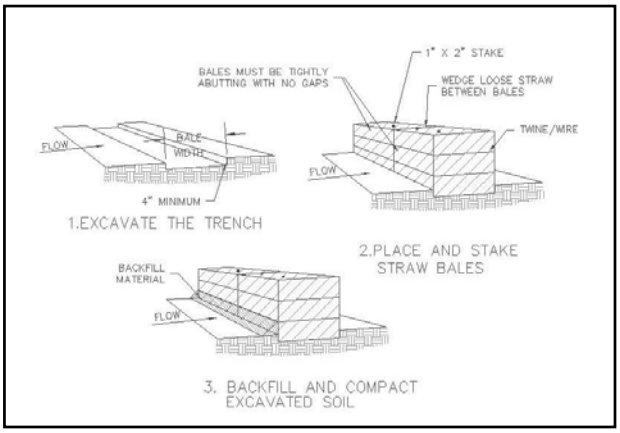


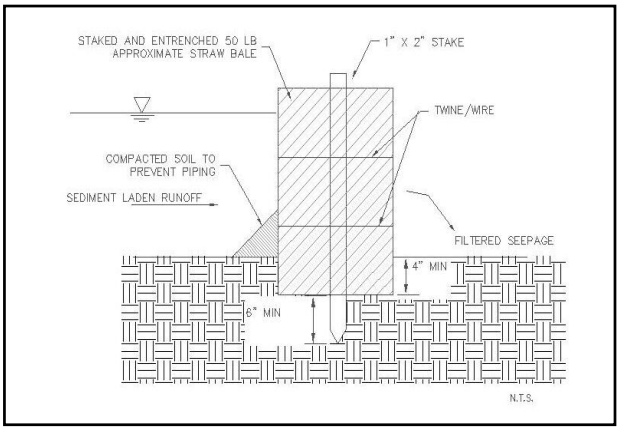
photo by Tom Johnson

Recommended erosion and sedimentation control practices

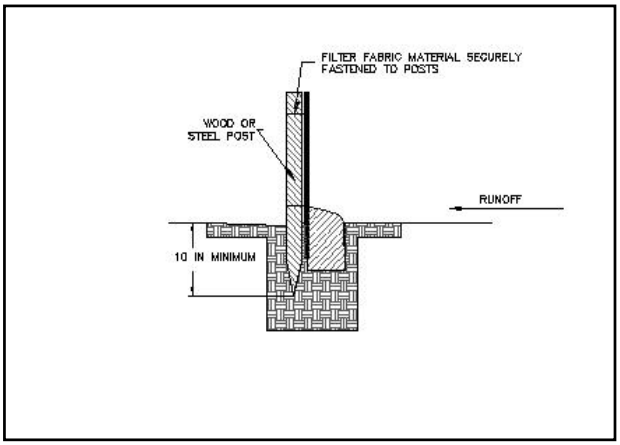
The following techniques and practices are recommended to manage soil erosion and control sedimentation:

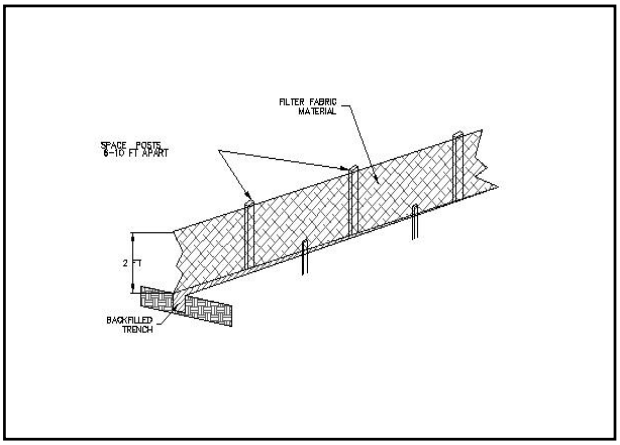
- Detention/retention/sedimentation ponds should be constructed and stabilized prior to other earth moving activities to collect sediments caused by erosion.
- Preservation of existing trees and natural vegetation on the site where feasible.
- Installation of perimeter fencing using for example, silt fences that are trenched in and back filled.
- Rock dams or straw bales are suggested in concentrated flow locations such as ditches or swales.
- Erosion control blankets
- Straw mulch
- Temporary or permanent seeding with native grasses or wild flowers
- Rip rap on steep slopes
- Placement of crushed rock or gravel on job site access driveways to control mud and dirt on public roads.





Straw bale installation detail





Silt fence installation detail

2.4 Building Placement And Orientation

2.4.1 Relationship to Adjacent Developments

All development proposals should show evidence of coordination with circulation patterns, massing and functional uses of adjacent buildings.

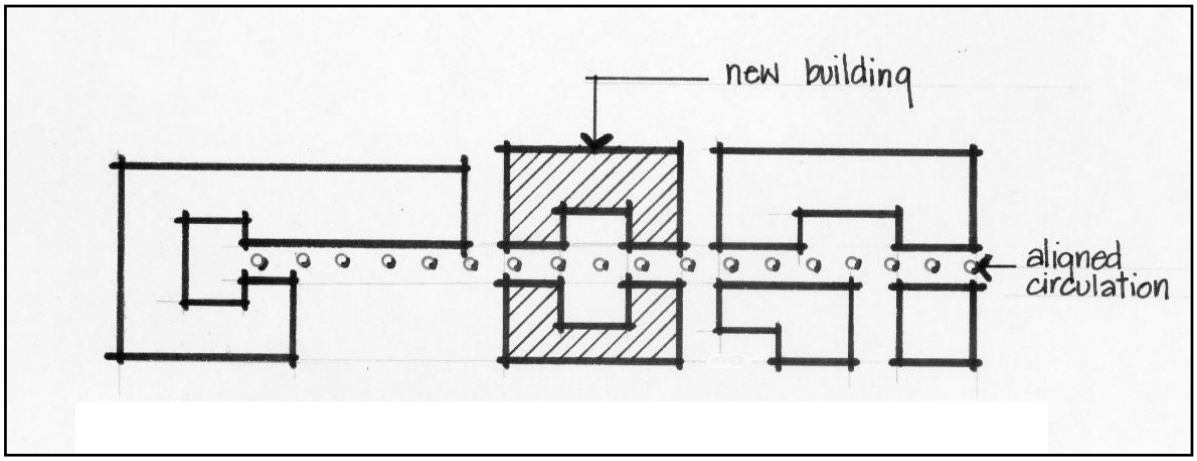
New buildings should coexist with their neighbors. All new development should show that the contextual influences of neighboring properties have been considered. A diligent effort to create careful relationships must also be shown. New buildings must be carefully placed in relation to existing buildings to break up the "urban strip-like" character of Sedona's commercial corridors.

The degree to which existing buildings should be considered in the design of a new project will depend upon their architectural quality as determined by the criteria as set forth in this Manual, building value and estimated tenure of the existing structures, as well as the particular requirements of the new project. City staff can provide applicants with the necessary assistance for those structures that have been determined to have historical significance.

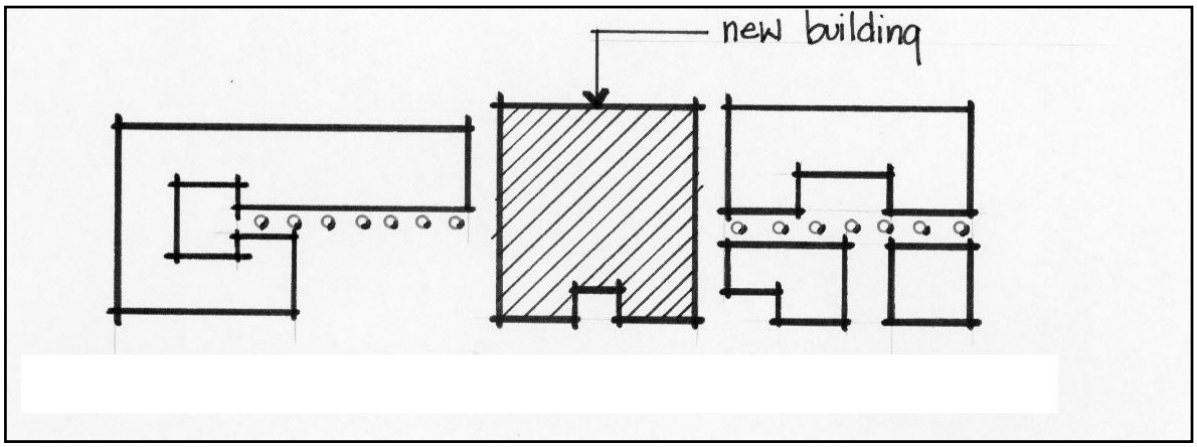
Drawings, models and other graphic communication presented to the City of Sedona for Development Review should show neighboring buildings and site features. The level of detail should be sufficient to enable the evaluation of the relationship of the proposed project to neighboring buildings.

Specific consideration should be given to the following:

Aligned circulation
Building placement should allow for interconnected walkways and parking drives. This has the advantage of for example, increased convenience, enhanced pedestrian accessibility, increased building exposure and enhanced safety.



Encouraged



Discouraged

Visually connected open spaces

It is desirable for open spaces and landscaped areas to connect visually with similar spaces on adjacent sites. See also Section 2.5.2, "Relationship to Adjacent Development".

Encouraged